Combined effect of starch and thymol on heat resistance of *Bacillus cereus* sensu lato isolated from milk

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Abstract

Thermal destruction of bacterial spores has a harmful effect on nutritional and organoleptic quality of food. These constraints incite industrials users to optimize the conservation process. In this context, this work aims to study the effect of thymol and starch on heat resistance of *Bacillus cereus* spores after two month of production on nutrient agar supplemented by $CaCl_2$ and $MnSO_4$. The bifactoriel plan was used included 4 level for each factor (6, 3, 1.5 et 0.75mM) and (2, 1.5, 1, 0.5%) for thymol and starch respectively. The greater decimal reduction time (D) of 50 min was observed for thymol. Moreover, the value of D of 43min was noted for higher concentrations starch (2%). Contrariwise, the starch have a protect effect of spores on recovery medium. The synergy between the two factors was observed (6 mM and 2% for thymol and starch respectively) against (0.75mM and 0.5%: thymol and starch respectively) by values of D of 20min and 50min respectively. These results are of primary interest in the control of food quality and to improve dairy products preservation.

Keys words: Milk, *Bacillus cereus*, Heat resistance, Starch, Thymol